

Date: Tue, 11 Oct 94 04:30:14 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
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Subject: Ham-Ant Digest V94 #340
To: Ham-Ant

Ham-Ant Digest Tue, 11 Oct 94 Volume 94 : Issue 340

Today's Topics:

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Problems you can't solve otherwise to brian@ucsd.edu.

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We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 10 Oct 1994 14:08:38 -0400
From: edh@hpuerca.atl.hp.com (Ed Humphries)
Subject: Antenna Rotor Wanted

Perhaps of net.interest:

Can someone tell me what the windload rating is
for the readily available Radio Shack antenna
rotator? The local sales-droids don't even know
what I'm talking about.

Anyone have the real figures instead of "it

turns a really big tv antenna"?

Cheers & 73
Ed Humphries
Hewlett Packard Atlanta GA
edh@hpuaerca.atl.hp.com

Date: Mon, 10 Oct 1994 16:44:52 GMT
From: Mike Lyon <mlyon@rahul.net>
Subject: does anyone have the phone number for heathkit?

i heard that heathkit still sells parts for there products. if anyone out there has the phone number for them it would be appreciated if you could e-mail it to me or just post it.

thank you,
mlyon@rahul.net

--
Mike Lyon <mlyon@rahul.net>

Date: 10 Oct 94 17:25:55 -0400
From: grimm@alison.sbc.edu (Kenneth Grimm)
Subject: does anyone know anything about the HM-2102 swr meter?

In article <CxFoup.CpF@rahul.net>, Mike Lyon <mlyon@rahul.net> writes:

>
> i recently purchased a heathkit hm-2102 swr meter. i would like to know
> how to calibrate it and what the knob that says "pull to set swr sens."
> means. i can't figure out how to measure forward/reflected power with it
> so basicall i want to figure out how to align it. also if anyone out
> there knows what bands this thing will work on that will also be
> appreciated.

> Mike Lyon <mlyon@rahul.net>

Not sure about your model number, but have had a couple of Heath bridges and homebrewed a bunch like them over the years. The following worked in all of those. Your mileage may vary....

With the knob pulled out and with a signal going through the bridge to the antenna, set the sensitivity to full scale. Push the knob in and read SWR.

73,

Ken

--

Kenneth D. Grimm
grimm@alison.sbc.edu

K4XL

Date: 10 Oct 94 21:03:11 GMT
From: mutual.advantage@filebank.COM
Subject: Enough already! i want 80

Quoting ham-ant: tigger@prairienet.org (Sean E. Kutzko)

H>Honestly, I want a DX performer for a SMALL city lot. Knowing that
H>this is a HUGE order to ask for with the limited space I have, I got
H>to thinking about an 80m horizontal loop. It would probably be no more
H>than 30' off the ground, fed with twin lead. DX would be faint, but a
H>possibility.

H>1) Would this antenna have an EXTREMELY high angle of radiation?

El nec suggests this antenna would have a radiation pattern resembling a tall barrel cactus. I think this is often referred to as a "cloud warmer". But on the positive side, as with most loop designs, it should hear less of the biggest problem that 80m has to offer - QRN. And, it is an inherently balanced antenna, which should minimize another big 80m problem, RF in the shack. Good luck.

Igottago, 73 de KF0IA ..
Stan.Huntting@filebank.com

≥ CMPQwk #1.4≥ UNREGISTERED EVALUATION COPY

Date: Sun, 09 Oct 94 11:34:00 -0800
From: bob.albert@ledge.com (BOB ALBERT)

Subject: Enough already! I want 80m!

You might try a loaded dipole, a dipole that is shorter than a half wave, with inductors added to make the electrical length greater. Thus, a 40m dipole can be converted to make a mediocre 80m dipole. The impedance will be different so it should have a matching device as well.

73 DE K6DDX

Date: 10 Oct 1994 16:25:29 GMT
From: skubi@athena.inria.fr (Marcin Skubiszewski)
Subject: How does a depolarizer work ?

I have heard of a device called "depolarizer". It is included in all European "full-band" (10.7 - 12.75 GHz) Ku LNBs used for satellite TV reception. It allows your LNB to get both linearly and circularly polarized microwave signals. Allegedly, this is a piece of teflon able to convert circular signals into linear. It is placed before the ferromagnetic polarizer.

Could somebody please explain to me (and to these newsgroups in general) how this thing works ? I have a theory about it, but I believe that the theory is flawed; here comes my theory anyway, please correct me as appropriate.

I hope that hams in radio.amateur.antenna won't find my posting inappropriate. After all, it is a technical question about radio antennas, even if it is not exactly a kind of antenna used by hams.

Marcin.

=====
Every radio wave can be viewed as a sum of two components: one horizontally polarized, one vertically polarized. We will use here the receiver's, rather than the satellite's, definition of "horizontal". Then, we can have among others

- a horizontal wave (in the receiver's coordinates; this corresponds with a horizontal transponder of a satellite having the same latitude as the receiver): the vertical component of the signal is zero.
- a diagonal wave (this corresponds with a horizontal or a vertical transponder of a satellite placed on a latitude much

different from the receiver's one): here the vertical and horizontal components are of equal strength and are in phase. It is easy to see that the total signal is diagonal: it is the sum of two perfectly identical signals, one vertical and one horizontal.

- a circular wave: the vertical and horizontal components are of equal strength, but one is delayed by period/4 wrt the other. Intuitively, in this case the signal is "circular" rather than "linear sinusoidal" because the electrical field vector goes in circles: instead of keeping a constant direction and having its value change sinusoidally, it keeps a constant module and keeps changing direction. Sorry, I won't get into more details here (the trigonometrically challenged can mail me for a more complete explanation).

My idea is that the piece of teflon (the depolarizer, that is) is anisotropic and introduces an extra delay of period/4 into one (say, the vertical one) linear component of the signal. This would

- keep vertical signals vertical (and delayed by period/4, but this has no importance)
- keep horizontal signals horizontal
- transform circular signals into linear, diagonal. The direction of the diagonal (left to right bottom up or left to right top down) corresponds with the direction (left or right) of the circular signal.

Explanation of this: In a circular signal, the vertical component comes to the antenna either delayed or advanced by period/4 wrt the horizontal one. After the depolarizer, it is delayed by either 0 or period/2. Putting it differently, it is always delayed by 0 and is or is not inverted (or "put upside down").

- transform linear, diagonal signals into circular.
Explanation: the vertical component, received in phase with the horizontal one, is after the depolarizer out-of-phase by period/4.

This is partly OK: to get a vertical signal, we just set the polarizer for 0 deg, for "horizontal" it is 90 deg, for the two circular polarizations it is respectively + 45 deg and -45 deg. But for a far away satellite, whose H and V transponders are viewed by the receiver

as + 45 deg and -45 deg diagonal, we have no reasonable way to get linear signals: these are seen by the LNB as circular. There is a 3 dB signal loss and no separation at all between H and V transponders. For a satellite whose transponders are seen as, say, -20 deg and 70 deg, the situation is intermediary: there is some signal loss (say 1dB), and the channel separation exists, but is quite weak.

So, either

I missed something

Or my explanation is OK, and depolarizers do have serious drawbacks.

Please enlighten me.

Date: Mon, 10 Oct 1994 11:10:13 GMT
From: rkm@vectorbd.com
Subject: Isoloop mobile?

Russell Gore (russ@usr1.primenet.com) wrote: : I am thinking about getting the MFJ isoloop thinge... [deleted]

I suspect that AEA would be very upset if MFJ was selling an antenna named the "Isoloop".

: -)

Date: 10 Oct 1994 16:07:24 GMT
From: Cecil_A_Moore@ccm.ch.intel.com
Subject: Newbie questions...and then some

In article <01HI3V7CICJ69X43H6@acad.fandm.edu>, Mark Hemlick Ph. D. <CCS_MAH@admin.fandm.EDU> wrote:

>This is gospel, and one is advised to NEVER use steel wire as the radiating element of an antenna.

Hi Mark, a little common sense goes a long way. If you were in an emergency situation and all you had for an antenna was steel wire, would you use it?

>If steel radiators are so bad, especially at higher frequencies (VHF & UHF), why are the radiators of >virtually all mobile antennas...stainless steel!!!!?

Assuming steel has 10x the resistance of copper, An 8 ft steel whip has approximately the same resistance as an 80 ft copper wire. The current is higher at the base of the whip and so is the diameter so the resistance is lower at the base. The base of the steel whip is typically larger in diameter than the wire in a copper dipole. For 100w into the base of a 50 ohm whip, the current is only 1.4 amps and the base of my RS steel whip is about one half inch.

Incidentally, the ballpark radiation resistance of a coat hanger is something like 0.1-j4000. The power you can stuff into a load like that is approximately $(v/4000)*(v/4000)*0.1$ Figure up how much voltage you need to warm up the coat hanger. 40,000 volts will give you 10 watts, but most of that power is probably radiated as RF and not dissipated as heat.

--

73, Cecil, KG7BK, 00TC (All my own personal fuzzy logic, not Intel's)

Date: 11 Oct 94 02:50:41 GMT
From: GEITGEY%UKANVM.BITNET@VM1.NODak.EDU (Lynn Geitgey KB0LRB)
Subject: Quad's

Hi All,

The other day, while browsing several Antenna books, I came across an interesting, but unexplained idea. Is there some Quad Guru out there, who can explain the reasoning behind locating the feed point for a Quad in a corner, instead of the middle of a loop? I understand the positioning of the feed point, on the bottom, for Horizontal polarization. An on the side, for Verticle Polarization.

What advantage/disadvantage's are there to the feed point being in a corner?

Any help is appreciated.

73 de KB0LRB
Lynn Geitgey
geitgey@ukanvm.bitnet

Date: 10 Oct 1994 18:43:20 -0400
From: c002@ns3.CC.Lehigh.EDU (David M. Roseman)
Subject: Superior coaxial line?

>

>One can even get this coax for free by visiting ones local cable TV provider.

>Ask them if they have any leftover chunks from the giant spools they use. Ive
>gotten some nice sections (as much as 100feet) this way. The connectors for
>Helix are, however, more valuable than gold.
>

i'd like to thank you for saying that...next time i'm near chan.39, i'll try!

DAvid

:)*****(:
David Roseman c002@lehigh.edu
SysOp of NODE 3 BBS The Flying HAM - BBS
Running OBV/2 Software KBR-9318 - CB
HAMmy in IRC N3SQE/SVARC - Ham
N3SQE@N3IQD.FN20GO.PA.USA.NA - Packet

Date: 10 Oct 1994 20:10:20 GMT
From: levine@mc.com (Bob Levine)
Subject: Tiger Tail (HT antenna)

There have been several posts about the Tiger Tail. I
distribute Antennas West gear and before I agreed to carry
the TT, I got a freebie to check out as I was skeptical
also. I used a signal strength meter by Nye Engineering,
the little cube with 2 antennas sticking out the sides.

I discovered that in the plane of the HT (my FT530), the signal strength
is greatly increased with the TT.(>2x) The signal strength directly
above the HT goes way down. The TT seems to increase the lobes
in the horizontal plane and reduce the amount of energy going
vertical. I did these tests the best I could with the HT in
a plastic holder and keyed up from about 5 feet away with a
speaker mic so I would interfere as little as possible.

Is it worth \$7.95? Well you can certainly make it with a piece
of wire. What you are paying for is the nice rubber coated wire
painted yellow with a custom connector that slips over the BNC
of the HT properly. You are also paying for someone else's time
to make it, package it, advertise it, buy flea market tables to
sell it, etc.....

Bob

Not to debate the \$ value of it any further, just wanted to tell

you that my simple tests certainly did show a significant field strength increase in the horizontal plane around the HT.

M

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